U410-1
11/14/88 A

PENNSTATE

College of Business Administration

Published since 1938

Pennsylvania Business Survey

October 1988

GOOD NEWS ON EMPLOYMENT FRONT IS SOMEWHAT TEMPERED

(This portion of the Survey *is being kept brief this month in order to devote more space and resources to the introduction of the "Pennsylvania Manufacturing Activity Index" which is found on page three.)*

Analyzing August economic trends in Pennsylvania merits caution as some conflicting signals have emerged. For instance, the report on employment and unemployment is perhaps one of the most encouraging to have been released since the onset of the recovery more than five years ago. At the same time, the other widely watched indicator of employment trends, nonagricultural job levels, was essentially unchanged from July readings.

The strength of the improvement in the labor force indicators caught many by surprise. Employment of Pennsylvania residents rose by 100,000 to surpass the 5.5 million (seasonally adjusted) mark for the first time. As a result, the jobless rate plunged by 0.8 percentage point to a seasonally adjusted reading of 4.5 percent, its lowest reading in nearly 15 years. Furthermore, just as it has for the past two years, Pennsylvania's unemployment rate remained below the nation's in August (see chart). However, employment trends over the past few years have not been overly impressive in Pennsylvania relative to the U.S. Indeed, as shown in the accompanying chart, the Commonwealth has turned in a performance over that time span that is very similar to that for the U.S. Hence, as pointed out several times in the past in the *Survey*, a relatively slow growing labor force has also made a contribution to the partial eradication of Pennsylvania's unemployment problem.

In that trends in nonagricultural payrolls were not consistent with the drastic improvement recorded in resident employment, it is best not to get overly excited. Specifically, **job totals in Pennsylvania nonfarm establishments came to 5.06 million in August for its highest reading for the month on record. However, after adjusting for the normal seasonal ups and downs which occur from month-to-month and do not reflect the underlying strength of job trends, the number of positions in these industries rose only slightly from July estimates.** In light of these relatively unimpressive trends on the nonagricultural jobs front, the employment and unemployment data for the next few months merit extra-close attention to determine if August's strong showing represents a new, more impressive trend, or if it was only a temporary improvement.

Despite a solidifying of job levels at record high levels in the building industries, **construction activity appears to be slacking off.** Total contract awards were off nearly $300 million from year ago readings in August, with the decline concentrated in the nonresidential and nonbuilding categories. The situation also worsened when comparisons are made with July activity and normal seasonal trends are discounted.

Of the three categories tracked, residential activity appears to be turning in the most impressive performance.

UNEMPLOYMENT RATE TRENDS IN PA AND THE U.S.
(percent)

SOURCE: U.S. DEPT. OF LABOR, BUR. OF LABOR STATS.

EMPLOYMENT TRENDS IN PENNSYLVANIA AND THE U.S.
(1985=100)

SOURCE: PSU, CENTER FOR REGIONAL BUSINESS ANALYSIS

But even here, gains recorded over the past several months fail to match up to those turned in earlier in the decade. The number of housing units authorized for construction by permit in each of the past four months has been less than in the year-ago month. Furthermore, the year-to-date gain in the value of residential contract awards which includes, among other things, improvements and modernizations in addition to new construction, although still positive, suggests that growth in activity began to ease in 1987 after a lengthy period of fairly rapid growth.

Elsewhere, activity in the State's steel mills remains on a path of slow but steady improvement. August also brought with it a surge in coal output in the Commonwealth's mines where tonnage has increased by a respectable amount so far this year. On a more negative note, retail sales growth slowed in July, the most recent data available. However, given the positive news which has characterized these industries over the past several months, it is much too early to label this the start of a downward trend, although future months merit close examination.

In conclusion, it does appear that Pennsylvania's economy continued to grow during August. However, **the fact that there were a number of conflicting signals suggests that there is room for improvement and the continued health of the economy, although likely, is not assured.**

— William D. Anderson

Economic Activity in Pennsylvania	UNADJUSTED DATA			SEASONALLY ADJUSTED DATA			SEASONALLY ADJUSTED INDEXES (1977 = 100)		
	1988		1987	1988		1987	1988		1987
	July	*August*	*August*	*July*	*August*	*August*	*July*	*August*	*August*
Pennsylvania Industries									
All nonagricultural industries									
No. of wage and salary jobs (thous.)[1]	5,057*	5,058	4,939	5,044*	5,048	4,928	110.5	110.6	107.9
Nonmanufacturing									
No. of wage and salary jobs (thous.)	4,000*	4,001	3,890	3,990*	3,996	3,885	123.8	124.0	120.5
Mining	30	30	31	29	29	30	60.4	60.4	63.3
Contract construction	257	259	246	238	239	225	129.5*	129.9	122.5
Transportation	136*	136	135	141*	141	140	87.7*	87.4	87.0
Public Utilities	106	106	106	105	105	105	104.3*	104.5	103.9
Wholesale trade	270*	270	267	267*	267	264	120.5*	120.5	119.2
Retail trade	877	875	865	876*	872	863	122.1*	121.6	120.3
Finance, insurance & real estate	301*	302	297	297	298	293	136.5*	137.0	134.6
Service & miscellaneous	1,353*	1,353	1,284	1,347*	1,350	1,281	156.1*	156.6	148.5
Federal government	144	143	144	142	142	144	111.1	111.1	112.1
State & local government	525*	527	515	545*	550	538	93.6*	94.3	92.3
Manufacturing									
No. of wage and salary jobs (thous.)	1,051*	1,056	1,047	1,054*	1,052	1,043	78.5*	78.4	77.7
Durable goods	605	603	593	604	602	592	74.6	74.4	73.1
Nondurable goods	446*	452	454	449	450	451	84.4	84.5	84.8
Ave. wkly. hrs. worked by prod. workers	40.8	40.8	41.1	40.9	40.9	41.2	103.5	103.4	104.2
Total wkly. person-hours worked (mils.)	29.3	29.5	29.2	29.5	29.4	29.1	76.7*	76.6	75.9
Total wkly. payroll (mil. dols.)	301.0*	302.5	290.9	304.1*	303.1	291.7	135.3*	134.9	129.8
Average hourly earnings (dollars)	10.28	10.25	9.96	10.30	10.30	10.02	176.1*	176.1	171.3
Average weekly earnings (dollars)	419.42	418.20	409.36	421.95	420.72	412.15	182.4*	181.9	178.2
Steel production (thous. tons)	1,142*	1,083	1,051	n.a.	n.a.	n.a.	56.7*	55.7	54.2
Industrial electric power sales (mil. kwh)	3,849	4,026	3,827	3,800	3,939	3,726	102.9	106.7	100.9
Mining									
Anthracite coal (thous. net tons)	309	451	441	301	382	391	61.6	76.1	80.1
Bituminous coal (thous. net tons)	5,538	8,010	5,705	6,493	7,816	5,511	92.1	110.8	78.1
Construction contracts awarded (mil. dols.)									
Total	818.8	806.1	1,091.5*	738.7	699.1	999.4*	229.6	217.3	310.6*
Residential building	392.8	437.3	363.9*	338.1	370.8	321.8*	240.2	263.5	228.6*
Nonresidential building	238.2	265.3	536.8*	239.7	205.8	463.1*	220.9	189.7	426.8*
Nonbuilding (utilities and public works)	187.8	103.5	181.7*	160.9	122.5	214.5*	222.0	169.0	295.9*
Retail Sales (mil. dols.)	6,290	n.a.	6,237†	6,258	n.a.	6,215†	n.a.	n.a.	n.a.
Employment of Pennsylvania Residents									
Employed, no. of persons (thous.)	5,568	5,680	5,534	5,429	5,525	5,381	113.0	115.0	112.0
Unemployed									
No. of persons (thous.)	315	249	303	304	261	315	75.7	65.1	78.6
Rate (percentage of labor force)	5.3	4.2	5.2						
Rate, seasonally adjusted				5.3	4.5	5.6			
Civilian labor force, no. of persons (thous.)	5,882	5,928	5,837	5,733	5,786	5,696	110.1	111.1	109.4
Initial claims for unemployment benefits	82,617	64,065	63,113	82,103	77,357	82,525	57.3	54.0	57.6

Consumer Prices, all items	Urban Indexes (1982-84 = 100) 1988 *July*	1988 *August*	1987 *August*	Percentage Change *Month Ago*	*Year Ago*
U.S. city average	118.5	119.0	114.4	+0.4	+4.0
Philadelphia	123.2	123.9	118.4	+0.6	+4.6
Pittsburgh	n.a.	115.3	112.0	n.a.	+2.9

[1] Total includes workers on strike. * = figure revised † = figure for July 1987 n.a. = data not available
SOURCES AND DEFINITIONS OF DATA ARE AVAILABLE ON REQUEST.

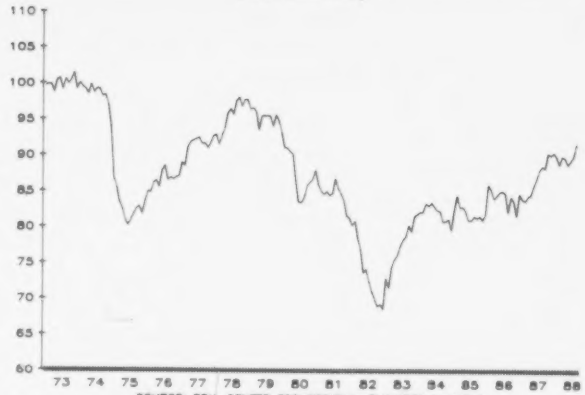
The Pennsylvania Manufacturing Activity Index

A good deal of attention has been given to the so-called "decline" of the manufacturing sector in the Commonwealth, not only in the *Pennsylvania Business Survey*, but elsewhere as well. For the most part, these discussions have focused on trends in job levels and, to a somewhat lesser extent, income. At the same time, we have often footnoted these analyses with a caution. Specifically, we pointed out that, although no hard data existed, it was quite likely that job and income information perhaps did not provide a true reflection of production activity in Pennsylvania's factories. Indeed, it is for this reason that information pertaining to industrial power sales and total hours worked has historically been a part of the *Survey's* focus, since these indicators may shed additional light on production trends. Still, these series only provided circumstantial evidence with respect to industrial output, which, in the absence of reliable data on the physical output of goods, was about the best that could be done.

However, a good deal of recent research, a fair portion of which has been initiated by regional Federal Reserve Banks, has focused on the development of methodologies pertaining to the construction of regional and state-level industrial production indexes. As a result, Penn State's Center for Regional Business Analysis has, over the course of the past several months, applied these various methodologies to Pennsylvania and developed a Pennsylvania Manufacturing Activity Index (PMAI), which is illustrated in the accompanying chart. In a nutshell, the PMAI suggests that the long-term trend in manufacturing output, stretching back over 15 years, has been slightly downward. In that activity tends to move with the business cycle, the index has increased since 1983, although factories do appear to be struggling to regain all of the ground lost in the most recent recession. Because of the difficulties experienced in the late 1970s and early 1980s, production in Pennsylvania manufacturing establishments remains about 10 percent below 1973 levels, the base year of the index.

The index is based on historical trends in the annual behavior of the share of output (real value added by manufacturing) accounted for by labor (represented by hours worked) and capital (represented by industrial power sales) and the productivities of these two factors. Value added represents the value of shipments less the cost of purchased intermediate materials, summed over each stage of the production process which, when adjusted for inflation, is a good proxy for physical production. Included in value added are primarily returns to labor and capital and, to a lesser extent, capital recovery, profits, interest on debt, taxes, and the purchase of business services. Much of this information is obtained from annual reports provided by the U.S. Bureau of the Census. These annual trends are applied to intervening months (the interpolation process) and, since the historical data is released with a considerable lag, extrapolated out to the present. These trends and patterns, in conjunction with information on total hours worked and industrial power sales, which we have access to on a monthly basis after only a brief lag, allow us to estimate real value added on a monthly basis for Pennsylvania's manufacturers.

PENNSYLVANIA MANUFACTURING ACTIVITY INDEX
(1973=100)

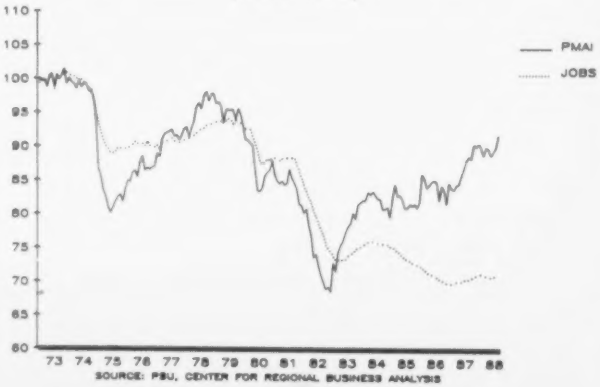


SOURCE: PSU, CENTER FOR REGIONAL BUSINESS ANALYSIS

Two points merit further attention. First, it does appear that recent job trends, say, stretching back to 1983, have failed to provide an adequate reflection of overall production trends. Specifically, it appears that production has been able to move forward while job levels have been on a downward trajectory (see chart). This is due to the fact that the average worker in Pennsylvania's manufacturing sector has become more productive per hour worked. Indeed, through the first eight months of this year, manufacturing jobs in the Commonwealth have declined by 7 percent since the trough in the business cycle around 1982/1983. At the same time, production has grown by approximately one-fifth.

Second, and on a more negative note, it does appear that, as with nearly all long-term indicators of economic activity, industrial production trends in Pennsylvania are worrisome when compared to those for the U.S., as shown in the accompanying chart. Other researchers have often made comparisons of regional industrial production indexes to the U.S. index as tabulated by the Federal Reserve. Such a comparison suggests that Pennsylvania has trailed the U.S. by a considerable margin. While production in the Commonwealth currently remains below levels from 1973, the base year of the index, U.S. manufacturing output has advanced by approximately 50 percent. However, because of differences in

PENNSYLVANIA MANUFACTURING ACTIVITY INDEX AND
PENNSYLVANIA MANUFACTURING JOBS
(1973=100)



SOURCE: PSU, CENTER FOR REGIONAL BUSINESS ANALYSIS

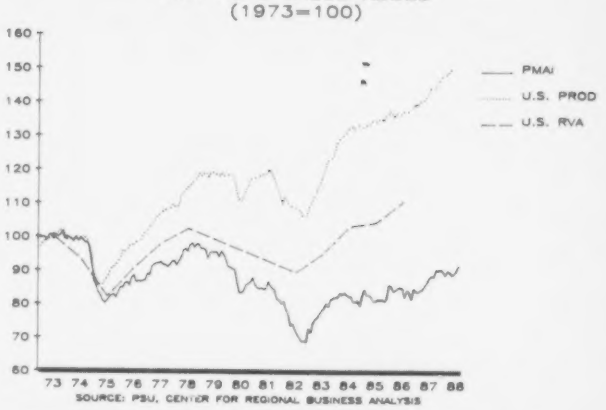
methodologies, such a comparison may not be appropriate. Ideally, comparisons should be made between the PMAI and a similar index using identical methodologies for the U.S. In the absence of such an index, a comparison is made through 1986 with the annual totals for real value added for U.S. manufacturers. Although this also shows the Commonwealth lagging the U.S., the shortfall is not nearly as large as when comparisons are made using the U.S. industrial production index.

The development of such an index provides us with yet another tool to analyze the Pennsylvania economy and, as a result, the PMAI will become an important component of the monthly analyses contained in the *PBS*. Some caution, however, is warranted in interpreting the index. Its fit with historical "actual" data is nearly perfect. However, over the extrapolated portion of the index (currently stretching back to 1987 since real value added data is available only through 1986) it is perhaps best to treat the index as a qualitative as opposed to a quantitative measure of manufacturing production trends since this portion of the index is subject to revision. Nonetheless, statistical tests have shown that earlier extrapolation periods did pick up turning points and provided a reliable indicator of output trends. In a nutshell, it is best to focus on long-term trends in the Pennsylvania Manufacturing Activity Index rather than on month-to-month movements in the index.

— *William D. Anderson*

(This is a summary of a paper presenting a more detailed analysis of the Pennsylvania Manufacturing Activity Index and its construction. The availability of the paper will be announced in an upcoming issue of the Survey.)

PMAI, U.S. INDUSTRIAL PRODUCTION, AND U.S. REAL VALUE ADDED
(1973=100)



SOURCE: PSU, CENTER FOR REGIONAL BUSINESS ANALYSIS

PENNSYLVANIA BUSINESS SURVEY

October 1988 Vol. 29, No. 10

Published monthly by the Division of Research of the College of Business Administration, 103 Business Administration Bldg. II, The Pennsylvania State University, University Park, PA 16802. Subscription rate: $7.00 a year. (ISSN 0031-4382)

J.D. Hammond, Acting Dean of the College
Paul H. Rigby, Associate Dean and Director of the Division of Research
Rodney A. Erickson, Director of the Center for Regional Business Analysis and Associate Director of the Division of Research
William D. Anderson, Assistant Director of the Center for Regional Business Analysis
Joette M. Wisnieski, Coordinator, Research Administrative Services
Doris J. Bickle, Staff Assistant
Mary Jane Corman, Subscription Coordinator

The content of this publication is not copyrighted and may be reproduced freely, but acknowledgment of source will be appreciated.

The Pennsylvania State University, in compliance with federal and state laws, is committed to the policy that all persons shall have equal access to programs, admission, and employment without regard to race, religion, sex, national origin, handicap, age, or status as a disabled or Vietnam-era veteran. Direct all affirmative action inquiries to the Affirmative Action Officer, Suzanne Brooks, 201 Willard Building, University Park, PA 16802; (814) 863-0471.

U.Ed. 89-177

PENNSYLVANIA BUSINESS SURVEY
Division of Research of the
College of Business Administration
The Pennsylvania State University
University Park, PA 16802

Nonprofit Org.
U.S. Postage
PAID
The Pennsylvania
State University

ADDRESS CORRECTION REQUESTED

* 018-01-03331
* DEPARTMENT SRI
CONGRESSIONAL INFO SERVICES
4520 EAST-WEST HIGHWAY
BETHESDA MD 20814